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Report No: L101505202R01

Date: 12/8/2015



NVLAP LAB CODE 200927-0

Report No: L101505202R01

Report Prepared For: Bartco Lighting
5761 Research Dr. Huntington Beach, CA 92649

Model Number: BSS225

Test: Electrical and Photometric tests

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Catalog number is BSS225. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 10/26/15

Date of Tests: 10/26/15 - 10/28/15

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/10/15
Xitron Power Analysis System	2503AH	MT-EL01	10/20/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/05/16
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Bartco Lighting
Model Number:	BSS225
Driver Model Number:	PHILIPS ADVANCE XI040C110V054BPT1
Total Lumens:	2931.55
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.27
Input Power (W):	31.75
Input Power Factor:	1.00
Current ATHD @ 120V(%):	6%
Current ATHD @ 277V(%):	N/A
Efficacy:	92
Color Rendering Index (CRI):	86
Correlated Color Temperature (K):	3621
Chromaticity Coordinate x:	0.3966
Chromaticity Coordinate y:	0.3814
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:50
Total Operating Time (Hours):	1:35
Off State Power(W):	0.00

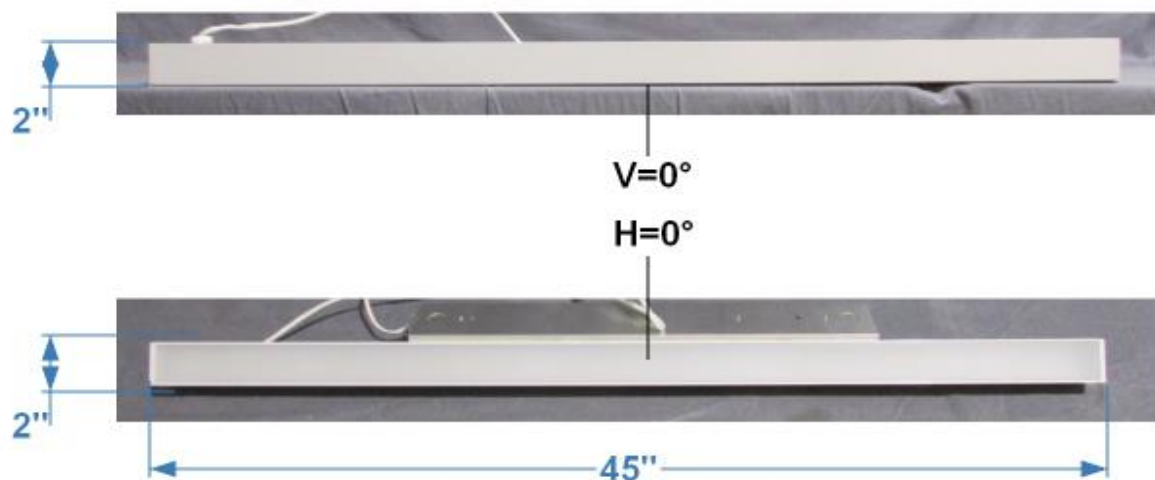
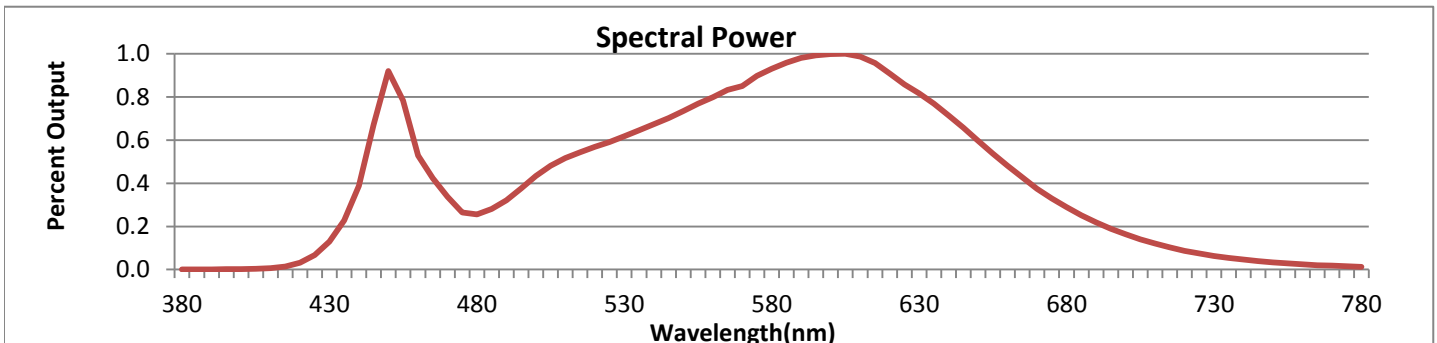


FIG. 1 LUMINAIRE



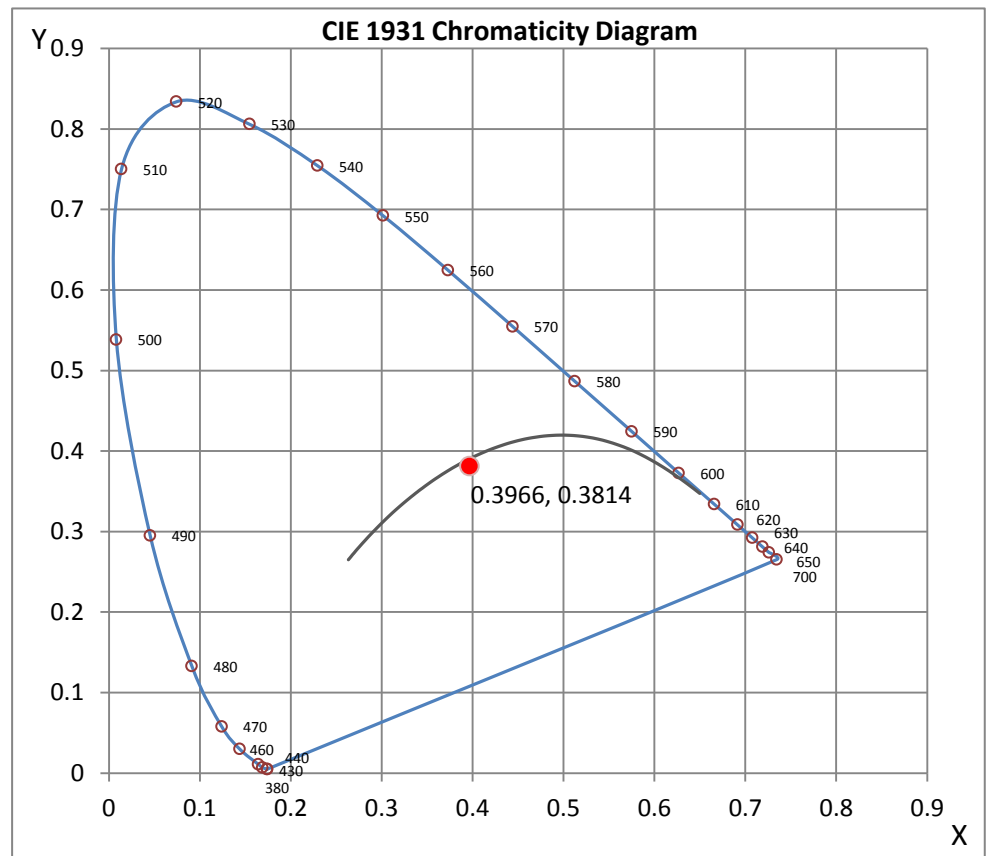
Wavelength	W/m ² nm	440	0.3882	510	0.5165	580	0.9313	650	0.5974	720	0.0866
380	0.0011	450	0.9209	520	0.5684	590	0.9817	660	0.4808	730	0.0631
390	0.0011	460	0.5291	530	0.6178	600	0.9995	670	0.3751	740	0.0459
400	0.0018	470	0.3367	540	0.6749	610	0.9880	680	0.2892	750	0.0333
410	0.0063	480	0.2559	550	0.7356	620	0.9094	690	0.2193	760	0.0241
420	0.0322	490	0.3212	560	0.7985	630	0.8170	700	0.1638	770	0.0177
430	0.1292	500	0.4333	570	0.8506	640	0.7138	710	0.1212	780	0.0129

CRI & CCT

x	0.3966
y	0.3814
u'	0.2339
v'	0.5060
CRI	85.80
CCT	3621
Duv	-0.00216

R Values

R1	85.01
R2	91.99
R3	96.07
R4	84.77
R5	84.97
R6	88.57
R7	86.69
R8	68.69
R9	24.30
R10	80.60
R11	84.21
R12	69.58
R13	86.82
R14	97.84





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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Keyur Patel

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 9*

**All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.*



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L101505202R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101505202R01
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 12/8/2015
[MANUFAC] BARTCO LIGHTING
[LUMCAT] BSS225
[LUMINAIRE] 2"L. X 45"W. X 2"H. LED LINEAR PENDANT
[BALLASTCAT] PHILIPS ADVANCE XI040C110V054BPT1
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 31.75W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2932
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	92
Total Luminaire Watts	31.75
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.24
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.15 ft
Luminous Width (90-270)	3.71 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	16862	17927	19103
55	14824	15936	17182
65	13077	14129	15363
75	11647	12543	13663
85	10199	11086	12638

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101505202R01.IES

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	1261	1261	1261	1261	1261	1261	1261	1261	1261	1261
5	1250	1250	1250	1250	1250	1250	1250	1250	1251	1251
10	1215	1215	1216	1216	1217	1218	1218	1219	1220	1221
15	1161	1161	1162	1163	1164	1165	1167	1169	1171	1173
20	1089	1090	1090	1092	1094	1096	1099	1102	1105	1109
25	1004	1004	1006	1008	1010	1014	1018	1022	1026	1031
30	910	910	912	914	918	922	927	932	938	943
35	812	812	814	817	820	825	830	837	843	849
40	713	714	715	718	722	727	732	739	746	753
45	617	617	619	622	626	631	636	643	649	656
50	525	526	528	530	534	538	544	549	556	562
55	440	440	442	444	447	451	456	461	467	473
60	360	360	362	364	366	370	374	378	383	388
65	286	287	288	289	291	294	297	301	305	309
70	219	219	220	221	222	224	227	229	232	235
75	156	157	157	158	159	160	162	164	166	168
80	99	99	99	100	101	101	102	104	105	106
85	46	46	46	46	47	47	48	49	49	50
90	0	0	0	0	0	0	0	0	0	0

Vert. Angles **Horizontal Angles**

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>
0	1261	1261	1261	1261	1261	1261	1261	1261	1261
5	1251	1252	1252	1252	1252	1252	1253	1253	1253
10	1222	1223	1224	1225	1226	1226	1227	1227	1227
15	1175	1177	1179	1181	1183	1184	1185	1185	1186
20	1112	1115	1118	1121	1124	1126	1127	1128	1129
25	1036	1040	1044	1048	1052	1055	1057	1058	1058
30	949	955	960	965	969	973	976	977	978
35	856	863	869	874	879	883	886	888	889
40	760	767	773	779	784	788	792	794	795
45	664	670	677	683	688	692	696	698	699
50	569	576	582	588	593	597	600	602	603
55	479	485	491	496	501	504	507	509	510
60	393	398	403	408	412	415	418	419	420
65	313	317	321	325	329	331	334	335	336
70	239	242	245	248	251	253	255	256	256
75	170	172	175	177	179	180	182	183	183
80	108	109	111	112	113	115	116	116	117
85	51	52	53	54	55	55	56	57	57
90	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101505202R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	448.57	N.A.	15.30
0-30	922.89	N.A.	31.50
0-40	1454.4	N.A.	49.60
0-60	2386.94	N.A.	81.40
0-80	2874.83	N.A.	98.10
0-90	2931.55	N.A.	100.00
10-90	2813.07	N.A.	96.00
20-40	1005.84	N.A.	34.30
20-50	1513.48	N.A.	51.60
40-70	1240.73	N.A.	42.30
60-80	487.89	N.A.	16.60
70-80	179.70	N.A.	6.10
80-90	56.71	N.A.	1.90
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2931.55	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	118.47
10-20	330.09
20-30	474.32
30-40	531.51
40-50	507.65
50-60	424.89
60-70	308.19
70-80	179.70
80-90	56.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

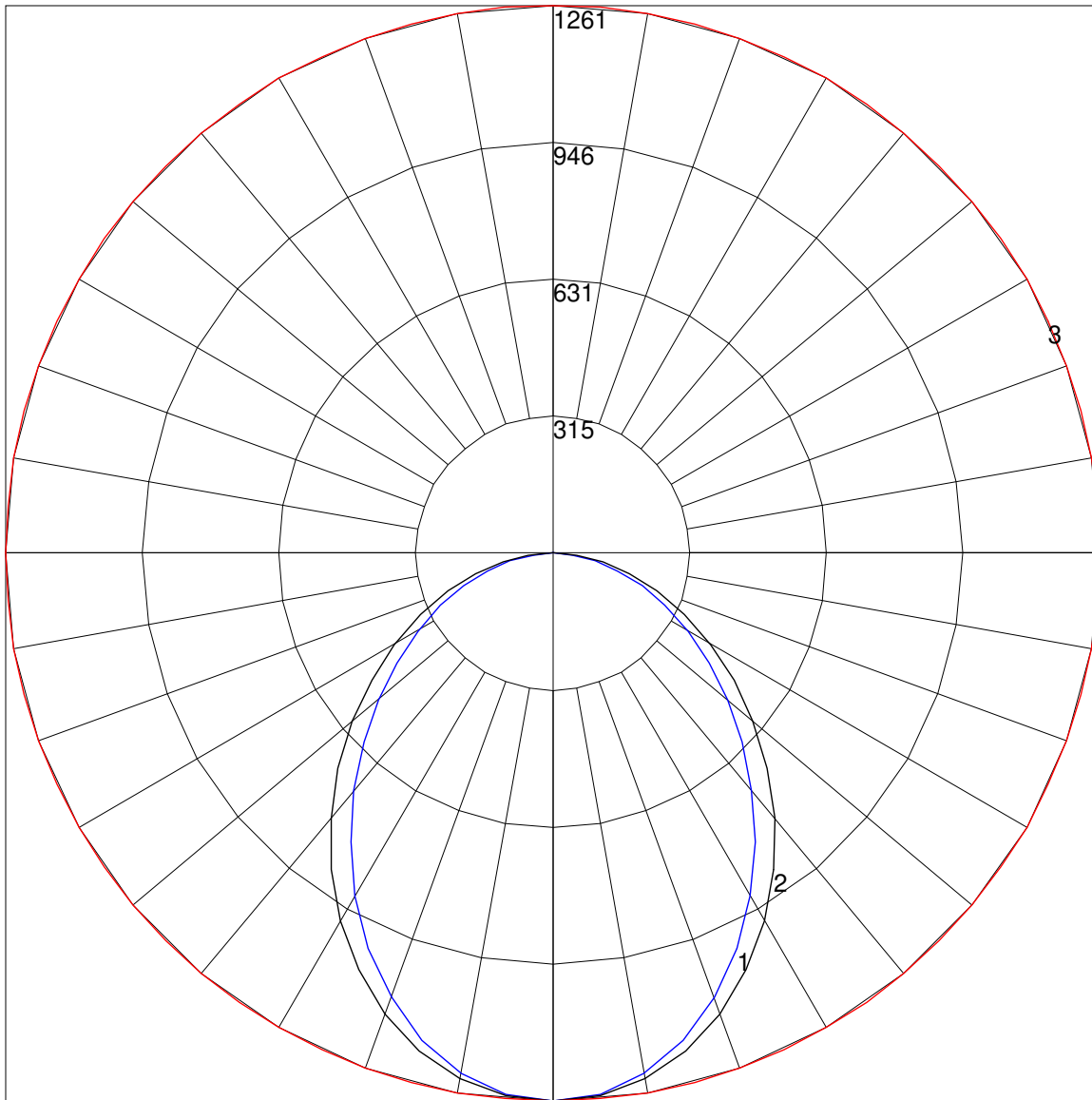
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	73	71
3	91	81	73	67	89	80	72	66	77	70	65	74	69	64	71	67	63	61
4	84	72	64	57	82	71	63	57	69	62	56	66	60	55	64	59	55	53
5	77	65	56	50	75	64	56	50	62	55	49	60	54	49	58	52	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	54	45	39	65	53	45	39	51	44	39	50	43	38	48	43	38	36
8	62	49	41	35	61	48	41	35	47	40	35	46	39	35	45	39	34	33
9	58	45	37	32	57	45	37	32	43	36	32	42	36	31	41	36	31	29
10	55	42	34	29	53	41	34	29	40	34	29	39	33	29	39	33	29	27

POLAR GRAPH



Maximum Candela = 1261 Located At Horizontal Angle = 0, Vertical Angle = 0

1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

2 - Vertical Plane Through Horizontal Angles (90 - 270)

3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)